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ACNE VULGARIS

By

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Acne Vulgaris is described by Pusy as "Folliculitis of the Sebaceous glands." All true Acne lesions originate with the sebaceous glands and follicles. The lesions vary from simple comedones, papules and pustules on an oily base, to large deep-seated abscesses with areas of destruction and pus formation. These latter lesions often form large pus sacks, and cause partial destruction of the sub-cutaneous tissues resulting in severe scar formation. True Acne is practically always accompanied by oily Seborrhoea and at times Seborrhoeic Dermatitis involving the adjacent skin areas. The disease is usually confined to the face, neck and upper portion of the back and chest. In some types of Acne, this scar formation is so severe that it ranks Acne as the greatest of all scar forming diseases, Small Pox not excepted. This type is usually associated with some definite constitutional defect which may persist over a period of years without discovery finally resulting in severe impairment of the individual's general health, and abnormal mental states due to the disfiguring scars. This is especially true in young girls whose whole life is necessarily affected by their appearance.

On the other hand, it may be a mild disease, a more or less physiological condition. This type of Acne is the one we usually think of when the subject is referred too. It manifests itself as a mild Seborrhoea, over-activity of the oil glands, comedones, papules and occasional pustules coming on particularly at the age of puberty. It varies in severity over a period of months or a few years and gradually clears completely leaving very little if any permanent scars. If all cases were of this type, there would be no need to be concerned about this condition. Unfortunately, this type is in the minority instead of the majority. The many cases of this more or less normal type, that clear up without treatment, have lead parents and the medical profession to neglect the treatment. No case of Acne, no matter how mild, should be considered in this light. Much can be done at the age of puberty not only to cure the mild types, but to prevent the development of the severe types. At the same time by a study of the cause and probable course of the early cases, we may be able to correct some important constitutional defect that may later seriously undermine the health of the individual. Acne, then should be studied and treated in practically all cases.

In order to arrive at some logical method of treatment, it is necessary to know something of the etiology of Acne. Even though it is a distinct disease entity, it is caused by so many different pathiological conditions, that it is often helpful to consider it as a symptom rather than a definite disease. This attitude may help materially in the proper treatment. Acne should be studied with the following etiological possibilities in mind.

First; mild Acne Vulgaris is usually associated with normal adolescence; with normal menstruation and a slight aggravation of symptoms at twelve to fourteen years of age. It is characterized by excessive oily secretions; fine discrete papules and occasional pustules; all in healthly individuals. There is no suggestion of any severe underlying constitutional cause and it usually adjusts itself without treatment over

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36 708

a period of a few months to two or three years. The treatment of this type of Acne is very simple. It is usually due to excessive oil, therefore the first indication of treatment is some restriction as to the very rich diets, particularly less candies, sugar and fried greasy foods. Locally the frequent use of soap and water followed by the application of astringent lotions. Never use greases of any kind on this type. You are dealing with an oily Seborrhoea that will be aggravated by any greasy ointment.

Second; Acne asociated with menstrual disturbances. Occasionally we find severe Acne of many years duration definitely connected with the menstrual periods. They are usually worse just before and during the menstrual period. Appropriate glandular therapy and other measures to correct the menstrual pathology is usually followed by improvement of the Acne. Some of these cases are so obstinate that they finally come to operation, the causative factor may vary from simple misplacement, low grade chronic pelvic inflammation, to large ovarian tumors. Then there are cases that do not get well until after the first pregnancy.

Third: Gastro-intestinal. The intestinal flora as it varies from time to time in some individuals is followed by outbreaks of Acne. The diet may be all that is desired, constipation and other hygienic measures may be corrected and still there may persist a disturbance of the mysterious -ph- of the intestinal flora that will cause a chronic Acne. The correction of this pathology is often difficult. Attempts to change the intestinal flora by the ingestion of Bulgarian Milk, coarse bulky foods, and measures to increase the fermentation by the administration of yeast, may correct the situation. Yeast has been widely advertised as a cure all, and in those cases where auto-intoxication and constipation are important factors, the administration of yeast is helpful. Hazen on the other hand, has reported three cases of Acne definitely proven to be due to yeast. The point to be learned here is that the intestinal flora is so profoundly influenced by different nervous and emotional states that no one line of treatment can be successfully carried out in all cases. The digestive disturbances, particularly related to the secretion of HCL in the stomach often bears a true relation to Acne. This is seen more in Acne Rosacea which is practically always asociated with a deficiency of HCL in the stomach. Acne Rosacea is an entirely different disease and seldom associated with true Acne Bulgaris. The former is closely associated with the emotional disturbances and it is a disease of middle life more than of adolescence.

Fourth; Foods play an important part in the production of Acne. In the young adolescent age, the Acne is often aggravated by excessive starchy and greasy foods, and our first thought in the treatment of Acne should be the correction of abnormal diets. A well balanced diet with plenty of vegetables and fruits and with the elimination of excessive starches and greasy foods, should be maintained in the treatment of all Acnes. The old idea that all skin eruptions are due to acid in the blood and the consequent elimination of fruits and such foods as tomatoes, etc., is fallacious. The question of food allergy or true sensitization in Acne plays a minor part. I rarely find any definite food reaction in Acne, either by the scratch or intradermal test. When definite food reactions are found the elimination of those foods does not seem to materially influence typical Acne. There are however, certain types of Acne that are due to specific foods. These cases persist into the twenties and even later and are characterized by recurrent attacks of small papules, seldom pustules, on a more or less dry skin. It is not the true Acne associated with Seborrhoea and never proceeds to large pustules and deep scar formation. White of Cleveland, found that this type of Acne which showed no specific food reactions by scratch or intra-dermal tests, but when placed on elimination diets, offending foods are found to be the direct cause of the eruption. To illustrate; I treated a young lady twenty-two years old, with x-ray and astringent lotions without improvement. Extensive food tests were done, all of which were negative. When placed on one of the elimination diets as advocated by Rowe, her face cleared completely. On the gradual addition of foods, the Acne eruption recurred when milk was given. This lady showed negative reactions to both the scratch and intra-dermal tests for milk. This is an illustration showing that certain types of

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Acne are due to specific foods and do not show any specific reactions by scratch and intradermal tests.

Fifth; Sugar tolerance is considered an important etiological factor in Acne Vulgaris. Investigations have been made endeavoring to prove that a true relationship existed between low sugar tolerance with consequent increase in blood sugar and altered skin secretions in the production of Acne lesions. The theory being that the excessive sugar in the blood and secretions enhances the growth of local pyogenic organism. So far there are no reports in the literature indicating that Acne is associated with hyperglycemia. The clinical evidence however, is fairly conclusive that increased sugar aggravates Acne. The opinion has been expressed that this might be explained on the basis of inadequate laboratory methods for the proper determination of blood sugar.

Sixth; Vaccines have been used extensively in the treatment of Acne. I use vaccines very seldom. The expense of preparing an autogenous vaccine and the time it takes to give a course of treatment, together with the very uncertain results renders this type of treatment unsuitable for Acne. Certain types of Acne are supposed to be due to a lack of proper gluttens in the blood. Intravenous administration of a vaccine such as Typhoid sometimes helps. Liver diet is also helpful in the same cases.

Seventh; Severe Acne with scar formation extending into the twenties and even into the thirties has for a long time been thought to be connected in some way with tuberculosis. Either as a tuberculide (that is a toxic eruption from some old foci of tubercular infection) or a real tuberculosis due to an attenuated form of the tubercle bacillus. One German author took cultures from Acne lesions injected them in successive generations of guinea-pigs, finally developing a virulent tuberculosis in the guinea-pigs, proving that certain types of Acne are tubercular in origin. Other Acne-like lesions of the face have recently been proven to be tuberculides. That is an eruption with tubercular structure but toxic in character and not due to the invasion of tubercular organism in the local lesion. With this information, certain types of Acne are now being treated successfully with tuberculin.

In recent years the salt restricted diets of Gerson and Hermannsdorfer-Sauerbruch have been used successfully in the treatment of tuberculosis of the skin. The theory of this diet is that the excessive sodium in the skin secretions derived from table salt acts as an irritant to the capillaries in the skin. An electrolytic disturbance of the cation balance. In an effort to correct the cation balance an equilibrated salt consisting of excess of calcium, magnesium and potassium ions have been substituted for ordinary table salt-sodium chloride. Theoretically this corrects the normal mineral content of the skin. This diet has also been used successfully in the treatment of scar forming Acnes which seems to me, to be further proof that these Acnes are tubercular in origin.

Eighth; Foci of infection. Infected teeth, sinuses, tonsils, appendix, gall bladder and any other infected area is capable of causing Acne. These foci should be diligently searched for in any Acne of obscure origin. Only recently, I had a case of Acne, which after the tonsils were removed, the Acne flared up, became very acute followed by disappearance of the lesions without further treatment similar to the reactions seen in rheumatism and neuritis following removal of foci of infection.

The local treatment of Acne should follow after the study of the various etiological factors enumerated above. Astringent lotions, and soap and water should be used to combat the local oily Seborrhoea. Ointments should never be used except in very rare conditions where the skin is dry. X-ray undoubtedly is the best local remedy and when used properly by experienced hands is a safe and efficient remedy. Its improper use, however, is often followed by disastrous results. Ultra-Violet Light in combination with astringent lotion locally and cod liver oil internally, is helpful in certain cases. There are several forms of collodial sulphur that are used in the treatment of Acne lesions which seem to be far superior to many of the ordinary astringent lotions. Other preparations may be given by mouth or intra-muscularly.

To conclude—Acne Vulgaris is a serious dis-

ease of constitutional origin requiring thorough study for its proper treatment.

DISCUSSION

Dr. John M. Van de Erve, Charleston:

Dr. Allison has presented a masterly resume of a difficult treatment problem. Many of us have thrown up our hands when confronted with it.

There are just two points to which I wish to call your attention. One is the use of iodized salt. It seems to me that in this part of the country, where we apparently have sufficient iodin in our food products, the use of iodine in table salt may be an aggravating factor. Iodine has been proved in a few cases to be a causative factor. It seems to me, therefore, that in mild cases it might be well to advise the patient that the salt used in cooking and at table be free from iodin.

Usually only the severe cases of acne are seen by the dermatologist. Most cases are seen by the family physician. Therefore the ideal treatment of acne would be in the hands of the family physician, who can obtain the cooperation of the mother of the child and prevent the occurrence, later in life, of acne. It is comparatively easy to pick up the seborrheic skin that later eventuates in acne. If you find scurf or dandruff on the scalp with blackheads or comedones on the face, if you take the case at this stage and regulate the diet, give endocrine treatment if necessary, and use local treatment, secure good elimination, etc., it may prevent the occurrence of acne. Use soap and water to remove the oily secretion; then use an astringent lotion. *Lotio alba* is probably the simplest, beginning with quarter strength and working up to full strength. Many of these children may be spared a severe acne in later life, with consequent pitting and scarring.

Dr. Allison, closing the discussion:

I think Dr. Van de Erve's point about the iodine salts aggravating the Acne is very possible and glad that he mentioned this fact. The doctor evidently knows this subject very well and I am glad to welcome him to South Carolina as a Dermatologist.

LATERAL SINUS THROMBOSIS

By

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This article has been prepared with the particular hope that the general practitioner might find it interesting and of value. Complete omission of theoretical discussion has been attempted. Briefness has been sought in keeping with accuracy and completeness.

It is the general practitioner who usually first gets patients with discharging ears and, consequently, it is up to him quite often to decide the proper disposition of the cases. He is at once confronted with the question whether to advise palliative treatment, to advise consulting an otologist, or whether surgical interference is urgent. To those physicians practicing in rural areas this decision is often of considerable financial importance to the patient as a trip to a distant specialist is expensive. If the physician is familiar with the more frequent and more important usual complications of discharging ears he is in a better position to decide wisely.

With these facts in mind, in addition to discussing lateral sinus thrombosis, this paper includes, under 'differential diagnosis', the differentiation of this condition from meningitis and brain abscess secondary to ear infection.

Contradictory statements about this condition are fairly frequent in the literature. One text (1) states that the patient is nauseated, labors under vertigo, is very restless, —; similarly, a second (2) states that the condition usually gives rise to headache, vertigo, vomiting, slowing of the pulse, —. Contrarily, a third (3) teaches that, in these cases, headache means meningeal irritation, that vomiting and headache together are especially indicative of cerebral involvement (abscess), and that nystagmus is strong evidence of cerebellar involvement (abscess).

This paper represents a study of some outstanding works on ear, nose, and throat diseases (4) together with a series of eighteen case histories. The author was interested to note that the findings in these 18 records paralleled closely the description set forth by Jackson and Coates in their text 'The Nose, Throat, and Ear and Their Diseases'.

Definition.—Lateral sinus thrombosis and lateral sinus thrombophlebitis are terms used clinically more or less synonymously to indicate the presence of thrombosis, associated with inflammation, of the lateral sinus, the disease being most frequently a complication of infection in the middle ear, particularly mastoiditis, and characterized clinically by remittent fever, polymorphonuclear leukocytosis, and often a positive blood culture.

Anatomy.—The cranial venous sinuses consist of spaces lined with endothelial cells walled in by dura mater. They do not have valves. There are two lateral sinuses, a right and a left, known also as transverse sinuses. Each begins at the internal occipital protuberance (as the continuation of other sinuses), passes laterally and anteriorly across the internal surface of the occipital and parietal bones, turns inferiorly on the medial surface of the mastoid temporal bone, and then pursues a tortuous course inferiorly, medially, and anteriorly to the jugular foramen where it joins the jugular vein. The tortuous portion is termed the sigmoid (s-shaped) sinus. The sigmoid sinus particularly is in close relationship to the mastoid cells of the middle ear.

Etiology.—Thrombosis, associated with inflammation, in veins in general, or even in arteries, is not especially rare. Thromboangiitis obliterans, typhoid and typhus fever, scalp and facial wounds and infections, any generalized or localized infection, senility, marasmus, pregnancy, poor circulation from any cause (decompensated heart disease, for instance), and even normal anatomical structure (pressure of the right common iliac artery on the left common iliac vein) have all been accused as causes and probably each has at some time been guilty.

However, while true that any of the above factors may be etiologic, lateral sinus thrombosis is almost always secondary to middle ear disease.

Due to any one or more of the factors mentioned below the middle ear infection (mastoiditis or purulent otitis media or whatever the condition be) reaches the wall of the sinus and then causes the formation of a thrombos, probably as a result of injury to the endothelial cells lining the sinus.

The factors chiefly concerned in the spread of the infection to the sinus are (a) direct extension by bony necrosis, (b) retrograde thrombophlebitis of the small venules passing from the middle ear through the intervening bone to the sinus, (c) extension through the bloodstream as a result of bacteremia, (d) the carrying of the infection from the middle ear to the sinus by the surgeon at time of operation on the middle ear, (e) the virulence of the infecting organism, (f) the resistance of the host, and (g) the improper performance of, or neglect to perform, myringotomy with the resulting accumulation of pus in the middle ear.

Sometimes, of course, when the infection reaches the wall of the sinus (phlebitis) the condition stops there: does not go on into the stage of thrombosis. This phlebitis is thought to be more serious than thrombosis in that the latter is looked upon as being, at least at times, protective. It is a clinically established fact that a larger portion of cases of phlebitis give a positive blood culture than do thrombosis (thrombophlebitis).

Once the sinus becomes involved the process may remain as a localized one; it may spread cranially and involve the rest of the lateral sinus, the sagittal sinus, the cavernous sinus or, indeed, any of the venous sinuses; or, it may spread inferiorly and involve the jugular vein.

Symptomatology.—Familiarity with the anatomy and etiology described above makes the symptomatology more easily understood.

Usually the case presents a history of an upper respiratory infection, especially nasopharyngitis, which was complicated by the development of otitis media and, most often, mastoiditis. Many of the cases give a history of a recent mastoid operation.

The onset is characteristically marked by a sudden, unexpected, rise of temperature to 103 or 104 degrees or more. There may or may not be a preceding chill. Then, after a variable time, usually a few hours, the temperature falls nearly to normal, to normal, or even to subnormal. The fall is most often accompanied by sweating. This cycle is repeated over and over, there being no specific time interval between the cycles. It is the usual septic, or 'spiking' temperature.

The sensorium remains clear except that the patient may mutter and mumble, especially during sleep. This is due to the fever. There is almost invariably no severe headache and, usually, none at all. When headache is present it is apt to be about the operative site. If severe it suggests the presence of a complication (see differential diagnosis). The patient does not look as ill as the temperature would lead one to expect; he may even insist he feels well enough to

be about. (This finding is particularly characteristic of bacteremia).

Blood culture is usually, but by no means always, negative.

Involvement of the jugular vein may result in damage to the three cranial nerves leaving the skull through the jugular foramen (ninth, tenth, and eleventh). This is known as Avelli's syndrome and is manifested by anesthesia of the pharynx and posterior third of the tongue, paralysis of the laryngeal muscles, and unusual prominence of the medial border of the scapula due to paresis of the trapezius muscle.

Papilledema may or may not be present; it is rarely marked.

It is a fact that obstructing the jugular veins by pressure (or otherwise) increases the spinal fluid pressure. Unilateral jugular (or lateral sinus) thrombosis of course obstructs the flow of blood through that jugular vein. If, therefore, pressure is made over the normal jugular vein during the manometric reading of spinal fluid pressure the pressure reading will rise if the opposite vein is obstructed by a thrombus. The reading returns to the previous level with the removal of the pressure over the unaffected jugular. This is known as the Ayer-Tobey sign and is of considerable importance especially if encountered early (before venous compensation has developed about the thrombosed jugular).

The spinal fluid is normal. There is usually no vomiting, no involvement of ocular nerves or muscles, no nystagmus, no vertigo, no signs of increased intracranial pressure, no symptoms of meningeal irritation, and no abnormal reflexes. As a matter of fact it is sometimes difficult to convince oneself that the patient has any such serious ailment as lateral sinus thrombosis.

The pulse rate rises and falls with the temperature variations.

The leukocyte count usually ranges between ten and twenty five thousand with polymorphonuclears predominating. Mild albuminuria is frequent. Glycosuria without hyperglycemia may be encountered.

Diagnosis.—The history of a middle ear infection, especially mastoiditis or a mastoidectomy, is most important. A longer or shorter time after the above infection or operation there occurs a sudden rise of temperature, usually to 104 degrees or higher, which may have been preceded by a chill. After a few hours the temperature is found in the neighborhood of normal, the fall usually being accompanied by sweating. This cycle is repeated indefinitely.

This should at once stimulate a complete physical examination including blood, spinal fluid, urine, and eyes. A surprisingly negative result is characteristic. Usually the leukocytosis, possibly a positive blood culture, and the Ayer-Tobey sign are the extent of the positive findings.

On top of this, the patient looks well.

Differential Diagnosis.—The three conditions always demanding differentiation when either is present are (1) lateral sinus thrombosis, (2) meningitis, and (3) brain abscess.

For lateral sinus thrombosis see 'Diagnosis' above.

The usual frank case of 'otitic' meningitis presents a persistently high temperature, rapid pulse, agonizing headache, often accompanied by crying out, and a mixture of restlessness and sleeplessness, excitableness and irritableness. Delirium or coma are frequent. The pupils are often unequal and, rarely, there is papilledema, nystagmus, and dizziness. Suboccipital and spinal tenderness, Brudzinsky's and Kernig's signs, and stiff neck are usual. Any of the twelve cranial nerves, especially the third through the eighth, may become involved. The spinal fluid is cloudy, contains markedly increased cells, is under increased pressure, the sugar reduction is diminished, etc.

The symptoms of brain abscess may be divided roughly into those due to suppuration of brain tissue and those due to pressure on brain tissues.

Suppuration causes an initial chill which may be very mild and which usually does not recur; persistently recurrent, associated, headache and vomiting; a temperature varying from slightly above normal to normal or subnormal; more or less dizziness; 'indifferent' facies; and a rather rapid loss of weight.

Pressure causes bradycardia, stupor, slight papilledema. In addition, cerebral pressure (cerebral abscess) causes hemianopic indentation of the visual fields, aphasia, and contrala-

teral, slowly progressive, paralysis of the face, arm, and leg.

In contrast to the cerebral pressure symptoms above, cerebellar pressure (cerebellar abscess) produces spontaneous nystagmus to the affected side (towards the bad ear); homolateral paresis of face, arm, and leg; a variable leukocytosis (?).

X-ray examinations (encephalography, etc.) may be of aid in determining the presence of a brain abscess.

There are other conditions that may at times have to be differentiated. For instance, one might manifest a malarial attack by the usual chill, fever, sweating and fall of temperature to normal. Further, this might occur during the course of a chronically discharging ear. The occurrence of the chill, etc., only on alternate days, the presence of headache, finding malarial plasmodia in the blood, the usually sub-normal white blood count, and the response to quinine, plasmochin, or atabrine are sufficiently diagnostic. Even in malignant malaria there should be enough of the above indications present to be diagnostic.

Many other diseases might prove confusing in some cases. Application of the teaching of general medicine then has to be relied on, as with malaria above. However, there is one practically constant finding that helps one to detect a guilty ear and sinus as the cause of the chill and fever: in a discharging ear any intracranial complication is preceded by an exacerbation of the pain, which may have been entirely absent for some time. The exacerbation may be so mild as to almost escape notice but it is almost invariably contained in a careful history. Frequently, too, the aural discharge diminishes shortly before the onset of the complication (during the exacerbation).

Complications.—Meningitis and brain abscess are themselves frequent complications of lateral sinus thrombosis. Bacteremia is fairly frequent —may be even considered a sign. Infectious arthritis, especially of the sterno-clavicular articulation, occurs often. Abscess formation anywhere, particularly of the hip, knee, or shoulder, is at times encountered as is also pneumonia.

The following findings, most of which parallel the above statements, were compiled by the author from the eighteen cases available to him.

One hundred per cent gave a history of middle ear infection. The length of time this had been present varied from four days to twenty years. The average was 3.08 months.

A mastoidectomy had been done shortly before in 94 per cent of the cases. And 17 per cent of the cases were detected at the operation on the mastoid. Of the post-mastoidectomy cases, the average number of days intervening between this operation and the detection of the sinus thrombosis (usually at a scondary operation) was 9.4 days. The maximum was 32 days.

As to the symptomatology of these eighteen cases each individual symptom is presented briefly below.

Chills: 50 per cent had one or more, all preceding the rise of temperature; in the other 50 per cent of the cases, while true that no chill was recorded, a slight chill could have been not noted.

Fever: 94 per cent had a striking temperature; 6 per cent had practically no fever.

Sweats: the fall in temperature was accompained by sweating in 50 per cent of the cases; as with chills, in the other 50 per cent the most that can be concluded is that sweating was not mentioned.

Pulse: The pulse paralleled the temperature in 89 per cent of the cases; comparative bradycardia was present in 11 per cent.

Headache: 56 per cent of the cases complained of headache. This is at definite variance with what one would expect until the fact is mentioned that in none of these cases was headache severe and, when present, it was chiefly complained of as soreness or slight pain about the operative site; 44 per cent did not complain of headache at all.

Appearance: 80 per cent of the cases looked perfectly normal grossly (facies, etc.); 20 per cent were irritable, restless, sleepless, or easily excited. In some of these cases a combination of the above was present.

Sensorium: the mind was clear in 77 per cent of these cases; it was cloudy at times in 23 per cent. The cause of this in these cases is not clear—high fever? threatened complications?

Nervous system: 80 per cent were normal

throughout—pupils, cranial nerves, reflexes, etc.; 20 per cent were abnormal. The abnormal findings below are from this 20 per cent.

Pupils: 89 per cent of cases normal, 11 per cent abnormal.

Nystagmus: 89 per cent none, 11 per cent more or less.

Vertigo: 94 per cent of cases none, 6 per cent some.

Brudzinsky: 100 per cent of the cases showed negative.

Kernig: 94 per cent of cases negative, 6 per cent positive.

Stiff neck: 94 per cent of the cases showed none, 6 per cent some.

Papilledema: 86 per cent showed none; in 16 per cent it was present but mild.

Coma: this was absent in 100 per cent of the cases.

Delirium: this was absent in 94 per cent of the cases and present in 6 per cent.

No explanation is offered by the author for the findings above that one would not expect to find except to remind the reader that no pathological condition is cut, dried, and invariable (one may have typhoid fever almost without fever, for instance) and that some undetected complication might have been responsible.

Spinal fluid: There are records of spinal punctures on only nine of the cases. This was normal in 55% of the cases; abnormal in 45 per cent. The fluid was not especially abnormal (as in meningitis) in any of these cases. The cell count varied from 10 to 900. Otherwise the fluid was normal.

Blood count: the average was 13,500 leukocytes, 75 per cent polymorphs; the highest was 24,000 leukocytes, 93 per cent polymorphs; the low was 7,000 leukocytes, 73 per cent polymorphs.

Blood cultures: In 60 per cent of the cases this was positive, almost always for staphylococci or streptococci; 40 per cent of the cases were negative. Most cases were cultured several times.

Glycosuria: this was absent in 100 per cent of the cases, even after repeated tests.

The complications developed by these cases consisted of bacteremia (if considered a complication), peri-nephric abscess; osteomyelitis of the temporal bone, bronchopneumonia, lobar pneumonia, brain abscess, cellulitis of the neck (at site of jugular ligation), and arthritis of the wrist, knee, and sterno-clavicular articulation.

In the only case in which the Ayer-Tobey sign was recorded as sought for it was positive.

As to the treatment of these cases, all were treated surgically (see below): 72 per cent recovered, 28 per cent died.

The average time that those who recovered remained in the hospital after operation for the thrombosis was 33 days; of those who died the average time between operation and death was 14 days, the maximum 27 days.

Three surgical procedures were followed, i.e., (1) jugular ligation, (2) jugular ligation with sinus drainage, and (3) removal of the clot with subsequent pressure to control any hemorrhage.

In addition, 13 of the patients had a total of 52 blood transfusions, an average of 4 each; five cases had no transfusion.

A few comments relative to these case histories are in order. In the first place the information obtained from them is only of comparative value: the series is too small to warrant definite conclusions. The information is of interest particularly as it compares favorably with or contradicts the findings in other series of cases.

Further, there were probably many cases of lateral sinus thrombosis in this hospital that recovered without operation, or even without treatment other than bed rest—some possibly not even recognized. It is evident that surgical interference is not, from this paper, demanded by a diagnosis of lateral sinus thrombosis.

Two definite conclusions, however, do seem in order. First, cases of lateral sinus thrombosis may present a variable clinical picture. Second, modern surgical interference combined with multiple transfusions results in a preponderance of cures.

Treatment.—This question will not be discussed as it is of interest almost wholly to the specialist, to whom these cases should be sent.

Summary.—Lateral sinus thrombosis is usually secondary to disease of the middle ear. The literature in general is rather confusing as to the usual symptomatology of the condition. This

should not be, particularly as the usual cases present consistently a set group of findings. The differential diagnosis is rather easy and clear cut.

Conclusion.—The general practitioner should familiarize himself with this condition. It is fairly frequent and, usually, amenable to proper treatment. The treatment should be left to the otologist.

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SOME PHYSIOLOGICAL FACTORS IN THE PRODUCTION OF THE ALLERGIC STATE, OR WHY ASTHMA

By

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Consideration of asthma, not as a disease entity but, as a symptom(1) of a systemic disturbance of fundamental biological perversion with diverse manifestations, materially facilitates its management. This disturbance, we term the allergic state, following the term allergy, introduced by Von Pirquet(2), which is defined as altered reactivity. The two important implications immediately appearing are, first, a reacting substance must attain contact with the reacting organism, the human body and, secondly, that organism must be so modified in one or several ways to produce a reaction out of all proportion to that occurring after contact of the normal or non allergic individual with this same substance. This latter will serve also as a satisfactory working definition of the hypersusceptible state.

A complete understanding of this modification of the individual would serve to make the control of allergic disease easy and tremendously enhance our knowledge of immunity. Of this much we are fairly certain, allergy in the human and its counterpart anaphylaxis in the animal are part and parcel of the process of immunity and these two untoward phenomena are "accidents in the course of defense"(3).

Read before the meeting of the Fourth District Medical Society, Gaffney, S. C., October 15, 1935.

If a guinea pig receives an injection of horse serum followed by daily injections for the next four or five days nothing happens. However, if an interval of ten days is allowed to elapse after the first injection before a second is given, anaphylaxis, usually fatal will occur. The dominant pathological finding will be an inflated condition of the lungs due to a contraction "peripheral in origin of the smooth muscles of the bronchioles"(3). Other changes to be noted are "a fall in blood pressure, a lowered coagulability of the blood and a leucopenia"(3).

There is convincing evidence to show that the first effect of the foreign substance or antigen (horse serum) is to cause the elaboration of a substance, antibody, within the tissue cells of the animal. Antibody production increases until at the end of ten days, it is sufficient in amount, both in tissue cells and serum, to combine at the former site with the antigen, reintroduced by the second injection of horse serum, to produce the train of physiological alterations resulting in the animal's death.

At this juncture I wish briefly to mention two fundamental experiments which tend to confirm the presence of antibody both in tissue cells and serum. In the Dale experiment(4), a guinea pig is first sensitized to a specific antigen, the animal is killed, the uterus is perfused thoroughly to remove all traces of blood and serum, and is then suspended in Ringer's solution with customary provision being made to record contractions. Addition of the specific antigen causes contractions of the uterus indicating that antibody was present in the tissue cells themselves. In the Prausnitz-Kustner reaction (5) the serum of a sensitive person is introduced into the skin of a normal individual. After a matter of minutes, introduction into this area of the specific substance to which the first person was sensitive causes a typically positive reaction indicating that antibodies were transferred in the serum. However, even though antibody is present both in tissues and blood serum the weight of evidence indicates

that all important antigen-antibody reaction takes place within the sensitized cells.

Meltzer in 1910(6) pointed out similarities in the lungs of human asthmatics and of guinea pigs dead of anaphylactic shock, with the result that for a time the two processes were thought identical but it has since been learned that in the human there are numerous discrepancies, with the result that the hypersensitive state has been found to be far broader. Such a state can be produced in a variety of ways in a manner excluding a simple antigen-antibody reaction with the result the term anaphylaxis is restricted by many investigators to "antigen-antibody reactions as seen in experimental animals" and allergy is used broadly in the human to include "anaphylaxis and other altered reactions such as serum disease and drug idiosyncrasies"(3).

The end result however appears due to the same fundamental mechanism, whether asthma, hay fever, urticaria or some other manifestation occurs. Most important of all, there is an alteration of smooth muscle physiology and secondly there is a disturbance in the capillaries. It seems likely that all the various symptoms can be explained by these two fundamental changes.

As we all know, the symptom, asthma, consists essentially of difficulty in forcing the air out of the lungs due to spasm of the smooth muscle surrounding the bronchioles, particularly the terminal or respiratory bronchioles. There is usually an associated excessive secretion of mucus by the bronchial glands, which may be more pronounced after the attack has begun to subside, probably due to the fact that the mucous glands lie outside the muscle layer, which having been in spasm, constricted their ducts. It appears furthermore, that these phenomena are due to vagal stimulation at the nerve endings in the bronchioles and glands.

This event occurs in one of two ways, by reflex vagal nerve stimulation or by direct stimulation of the vagal endings by some substance present in the blood of that immediate area. As to the origin of this substance there is rather general agreement, namely that in some unknown way it results from the antigen-antibody union above described. As to its nature there is less concurrence of opinion. Of the various theories, it seems to me, the belief that the substance is closely related to or identical with histamine, carries most justification. I shall discuss the histamine theory in more detail later.

Consideration of reflex vagal stimulation necessitates a brief description of the asthmagenic area of the nose. "This area begins with the lower margin of the middle turbinal and includes all of the upper air passage extending from this margin to the cribriform plate both the lateral and septal surfaces of the nose being included. It is bounded in front by the anterior end of the middle turbinal and extends posteriorly to the sphenoid body and may include the sphenoid cavity. Laterally it extends from the septum to the lateral plate of the ethmoid."(3)

Stimulation of this area mechanically or otherwise leads to bronchospasm through the nasopulmonary reflex inasmuch as this area is supplied by the ophthalmic and maxillary divisions of the fifth nerve whose descending root ends about the cells of the nucleus ambiguous which represents the motor root of the vagus and glossopharyngeal nerves.

This leads to an important point in the treatment of asthma. A very careful distinction must be made between primary inflammatory conditions of the nose and its accessory structures and secondary allergic changes to clarify the indications for operative measures. In respiratory allergy as a whole, changes occur in the mucous membrane of the nose and accessory sinuses as well as the lungs, which though often considered due to primary inflammatory processes, are actually merely secondary manifestations of the underlying allergic disease. To inspection, turbinates may appear to be greatly swollen and sinuses cloudy to transillumination and x-ray with complete disappearances of these phenomena when the asthmatic attack ceases. In such conditions their nature will be clear if one remembers that such swollen mucous membranes are moist, translucent, edematous and pale. Operation in such a case, will obviously not be of help and will so impair the mucous membrane to render it more susceptible to subsequent onslaught by the exciting agent. However, such frank mechanical irritants as ethmoidal polyps and high septal spurs are treated

operatively with justification and the patient is improved.

The greater proportion of cases probably results from direct stimulation of the vagal nerve endings in the lungs by a chemical substance, probably as indicated above, closely related to histamine.

Injection of histamine intracutaneously causes a large wheal and a surrounding area of erythema due to an increase in capillary permeability with the passage of fluid into the tissues, and capillary dilatation. It is probable that relaxation of the arterioles occurs also. Systemically it causes a fall in blood pressure and bronchial constriction with associated subjective symptoms of faintness, giddiness and difficult respiration. Histidine, an amino-acid present in all tissue cells, especially those of various mucous membranes, is easily converted into histamine by the removal of carbon dioxide atom from the molecule of the former. It seems probable that a substance, the "H" substance of Lewis(7), with identical actions as histamine is produced in the various allergic conditions and histidine is one possible source.

There is a difference of opinion as to the susceptibility of allergic and non allergic people to histamine. Observations made in the course of gastric analyses in which histamine is employed would indicate a difference in the reactions of various people but they do not necessarily fall into clear cut allergic and non allergic groups. In general, it seems that histamine, if formed in the course of allergic disease, exerts its effect predominantly on those tissues in the immediate vicinity of its site of formation and that the antigen-antibody reaction in asthma takes place within the lung itself.

So far we have been concerned with some of the underlying mechanisms in the production of allergic symptoms, especially, asthma. Of more clinical interest is a consideration of why people have asthma. There are three fundamental requirements. A person first of all must have the capacity to become sensitized, secondly, he must become sensitized by contact with a sensitizing agent, and thirdly, after the induction of this state further contact with the sensitizing agent is necessary for the production of symptoms.

This capacity to become sensitized, we call, the allergic background, the soil in which the seeds of allergic diseases must be sown to thrive. And chiefly in this respect is allergy in the human different from anaphylaxis in the guinea pig. This species can be sensitized to horse serum in essentially 100 per cent of cases while only about 1 per cent of humans have the capacity to become sensitized at all to any substance(1).

Without doubt the factor producing this background, of far more importance than all others, is heredity. In Bray's series of 200 cases of asthma in children there was a unilateral family history of allergy that is either in the mother's or father's side of the family, in 51.5 per cent of cases and a bilateral history, in 17 per cent of cases. In only 31.5 per cent of cases was there no positive family history. Even more striking was the fact that of the unilateral cases transmission of 64 per cent occurred through the mother's side while only 36 per cent through the father's(3). Just what is transmitted is difficult to say at present but essentially it is the tendency to hypersensitiveness. Transmission through the father obviously must take place through the germ plasm. Though active sensitization of the fetus in utero may occasionally occur(8) and passive sensitization, rarely, by the transmission through the placenta of antibodies preformed in the mother, it is likely in the vast majority of cases that transmission through the mother occurs essentially in the same manner as in the father.

Given the allergic background contact with a specific sensitizing agent must occur. This factor follows the rules of common sense. Poultry raisers become sensitized to feathers, stock raisers and horsemen to horse dander and other animal emanations, horticulturists to plant pollens, babies to milk and egg. Such an associative list could be continued indefinitely. More intriguing is the fact that, following routine skin tests, frank sensitivities, though probably not important in the production of symptoms at the time, are found, yet after careful questioning only a casual opportunity, or perhaps none at all, for contact with the sensitizing agent seems to have occurred. This would indicate that though prolonged exposure to a given agent is

more likely to produce specific sensitivity to it the same situation may be accomplished by the briefest contact. An important corollary immediately appears with reference to the treatment of asthma, namely, the skin tests must be closely correlated with the environmental history and our greatest energies directed toward the removal of, and the desensitization to, those substances in the patient's sensitivity pattern where contact is most likely.

The patient who presents himself to us for treatment has already fulfilled all three primary qualifications and our problem resolves itself in to the identification of the sensitivity, and preferably if at all possible, the prevention of further contact and general treatment of the patient to restore the normal equilibrium of his smooth muscle and bronchial glands. These two goals failing achievement, we are then forced to fall back on an effort to neutralize specifically the existing sensitivity. This process we term desensitization.

However, time does not permit discussion of sensitivity tests, desensitization procedures, and the technique of treatment in general. I have merely tried to present what to me has been a helpful concept in trying to understand a difficult disease, the allergic state, and its most distressing symptom, asthma.

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AN OUTLINE OF THE HISTORY OF ORTHOPEDIC SURGERY

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To write a complete history of the development of orthopedic surgery would be a tremendous task. To sketch briefly this development in a limited space of time is difficult, and many important phases must necessarily be omitted. It is with the hope that some of the more important developments can be traced that this paper is attempted.

The origin of bone and joint surgery is almost as antique as our knowledge of the human race. Hundreds of skeletons which have been unearthed from the burial grounds of the prehistoric men of Europe, Asia, and Northern Africa show all grades of bone pathology and injury. For example, there is a large osteochondroma on the femur of the original Java Man, Pithecanthropus erectus. In the original Neanderthal skeleton the ulna shows a fracture which has united in good position. There was, of course, no attempt at bone surgery as we know it today. When there was an acute infection of bone such as osteomyelitis, the disease either ran a self-limited course or ended fatally. Paleolithic man probably acted as other high-grade animals and treated his fractures instinctively. By judicious rest with possibly some form of support, followed by cautious return to motion, no doubt some very excellent results were accomplished.

At some time during the course of neolithic development knives and saws were invented and the first evidence of amputated stumps were found. These operations were formidable but not necessarily fatal. In the caves of La Tene, in France, many illustrations of figures with amputated fingers have been found. There being no apparent pathological reason, it is thought by some that the operation was done in obedience to some religious custom.

Another commonly practiced surgical proceedure was trepination. It is apparently the earliest of all bone operations and was universally practiced. Trephined skulls have been found not only in Old World deposits but also in the graves of pre-Columbian America. Sharpened stones were used to make the opening in the bone, and even in spite of absolute ignorance of asepsis, many of the patients recovered. It has been generally believed that these frequently done operations were performed at the insistence of the medicine man or witch-doctor to give vent to the evil spirits which were disturbing the patient. However, Hrd-

licka, the eminent anthropologist of the Smithsonian Institute, has recently demonstrated that in many instances trepination may have been done in cases of head injuries with fracture of the skull to relieve the development of paralysis and coma.

A study of the decorative pottery used by our early progenitors throws valuable light on man's further progress in civilization. Many of the larger urns and mural decorations carry illustrations of the types of people in the community. Hunchbacks, dwarfs and other forms of cripples are represented.

Following the introduction of the art of embalming in the era of pre-dynastic Egypt much more interesting material was brought to light. G. Elliot Smith and his co-workers in archeology in the Nubian Desert uncovered mummies of the Fifth Dynasty (2750-2626 B.C.). Some of these bodies had fractured limbs still bound in splints which were evidently very ingenious and effective. It is doubtful whether tuberculosis existed in Early Egypt, but Ruffer describes an unquestionable case of Potts disease with psoas abscess in a mummy of the twenty first dynasty (1000 years B.C.). However, the various forms of arthritis were extremely common, and the spa, which is one of the oldest of all therapeutic institutions, thrived on the treatment of these chronic joint cases. There is very little evidence of any attempt being made to treat the congenitally deformed since the virtue of society during the incumbency of the Pharoahs called for extermination of these unfortunates.

Early Egyptian methods are important chiefly in that they formed the matrix from which, through Minoan and Aegean channels, the remarkable cultural achievements of Greece later developed. Grecian surgery began just preceding the age in which Homer lived. The opportunities which was afforded gave tremendous impetus to medical and surgical development. The Greco-Roman temples became centers of medical service, and, although the practice was primarily religious, it used the best medical science at its disposal. The great establishments at Cos and Epidauros cared for the crippled, deformed and disabled, and became the patterns after which Christianity in later centuries modelled its hospitals.

The earliest truly scientific treatise on medicine was that remarkable series of volumes ascribed to the physician for whom they were named and known as the Corpus Hippocrates. The exact dates of the existence of Hippocrates are not known, but it has been determined that these most important of all Greek texts appeared at sometime between the 4th and 1st centuries B.C. Some of his books are especially applicable to orthopedic surgery and should be read by everyone interested in this specialty. Almost all of the basic principles underlying the practice of orthopedics can be found in his books, "On Fractures," "On the Articulations," and "The Surgery." Much of the material which has been presented as modern and original in comparatively recent years was forgotten by the world for centuries and can be found in the Corpus Hippocrates.

Even though it was the custom among early Greeks to destroy infants with congenital defects and deformities, Hippocrates describes spinal curvature, club foot and congenital dislocation of the hip. He recommended gymnastic exercises, heat and massage, bandaging and splinting, and the use of machines, but it is not recorded that he had recourse to surgery. Artificial limbs, braces, splints and club foot corrective shoes were used, but probably the most famous apparatus devised by Hippocrates was his Scamnion. This was an ingenious but crude type of fracture table with windlasses on which traction could be applied for the reduction of fractures and dislocations. Its use continued for centuries.

In spite of the fact that many creditable methods were in use at this time, certain interesting and curious practices were maintained by isolated nomadic tribes. A few of their methods warrant reciting. A patient with a dislocated hip was kept in a darkened room for three full days. He was sweated by the constant burning of fires. No food was allowed but the sweating was enhanced by copious drafts of warm rice water. During this same time a bullock or buffalo was confined and fed only on chopped straw and salt, no water being allowed. At the end of the three-day period the patient was placed

astride the animal and his ankles securely fastened together with cords under its abdomen. The animal was then led to water and allowed to "drink until its belly swells to about double that of its former size." This distention either "brings the wandering bone back to its socket or produces more serious results likely to render the victim a helpless cripple for life."

To reduce a dislocated shoulder an empty goatskin was placed between the flexed elbow and chest, the corresponding hand being securely fastened to the opposite shoulder. The goatskin was now slowly filled with water until it weighed 100 pounds or more. The weight and increase in size of the bag overcame resistance and either "betterment or farther injury resulted."

A dislocated ankle was treated by burying the foot in a hole dug in the ground. After being firmly fixed by packing earth securely about it the limb was then forcibly pulled outward "with a fair chance of the joint returning to its normal position."

Some of the Hippocratic methods may be briefly mentioned as follows: The principle of continued traction to overcome muscular pull in fractures of the long bones was well understood. Judicious padding of splints to prevent pressure sores over bony prominences was taught. Fractures of the clavicle were known to heal readily, and tardy or nonunion was recognized in other locations. They did not comprehend the circulation of the blood as described by Harvey 1500 years later, but they knew that a constricting bandage produced venous stasis and favorably influenced delayed union. Bier, within our own memory, has so popularized this principle that it is widely known as his method of venous stasis, when in reality its origin dates back to the author of "On Fractures." Their methods of reducing shoulder dislocation by traction and counter traction in the axilla are classical. Recurrent shoulder dislocations were treated by application of the actual cautery to the inferior capsule, deep in the axilla. The scar tissue contraction following cauterization accomplished the same results as some of our modern operations. Hip dislocations were reduced by straight manual traction, except extreme cases which were either hung by their legs from an overhead beam or treated in the famous Scamnus Hippocrates. Overcorrection of club foot was known to be essential. Spinal deformities were treated with extension on a flat surface and prolonged recumbency on a hard mattress. Considerable force was frequently used in attempts to correct kyphosis, though it was commonly known to be ineffective. They understood the late kyphosis which develops after fractures of the spine. Along with these active measures, the value of proper diet and hygienic measures were stressed.

Aside from the many splendid methods of fracture treatment it is surprising to note the very modern conception of motion and rest which guided the Hippocratic surgeons. These methods, after the time of Galen, were mostly forgotten by the world until the 18th century. A sentence from the book, "On Surgery," concerning fractures in general deserves quotation: "It should be kept in mind that exercise strengthens and inactivity wastes!" That one simple statement contains all of the fundamentals developed in our elaborate physiological knowledge of the atrophy of disuse. Early mobilization of fractures was one of the many principles recognized by the ancients, ignored for ages and even today by many surgeons it is frequently not understood. In general, it can be said that Hippocratic orthopedics contained within itself practically all of the elements of modern technic, other than the operative.

The history of orthopedic surgery from the time of Hippocrates until the eleventh century can be rapidly summarized. Except for a few notable characters, it was practically barren. Celsus advocated gymnastics, active and passive motion, soon after the beginning of the Christian Era. Ephesius described the deformities later designated as "rickets" by Glisson. Galen, who lived from 131-120 A.D., was a truly remarkable Roman physician who made many valuable contributions to anatomy, physiology, embryology, and neuroanatomy. He coined the words "lordosis," "kyphosis," and "scoliosis." He knew that blood was contained in the arteries and veins. He understood and used the term "anastamosis of the capilliaries," and all but preceeded Harvey in his discovery of the circulation. Aurelianus, in the second cen-

tury, described the treatment of paralysis, and Antyllus, one hundred years later, advocated tenotomy for ankylosed joints. Paul of Aegina (625-690 A.D.) wrote extensively and left a profound influence for succeeding centuries. He was much nearer to Hippocrates in method and attitude than any of his contemporaries. Following Paul came the Arabians and for several centuries southern Europe was dominated by Mohammedan culture. The Mohammedans were antipathetic to the cutting of the human body, alive or dead, and this fact militated against the development of surgery in the Middle Ages. Rhazes (861-932), Haly ben Abbos (994), Avicenna (980-1037), and Isaac Judaeus (885-955) were the outstanding figures of this period, but they were physicians rather than surgeons.

The cultural complexion began to change in the 11th century. The university at Salerno was established. Its faculty was composed of the best available talent, and students came from all parts of Europe. Soon after this, the great teaching centers in Paris, Bologna, Oxford, Montpellier, Padua and Naples were founded.

From this period on, it would be impossible to mention all of the various outstanding men of surgery. The names of Saliceto, Guy de Chauliac, Leonardo da Vinci, Ambroise Pare, Fabrizio and Coiter will always be famous. Their work was aided by the eminent anatomists of that period—Versolina, Fallopius, Servitus, and Eustachius. There was considerable conflict with the barber-surgeons, but in addition to various types of corsets, braces, poultices, salves, etc., the surgeons used many cutting operations. Nerve, muscle, and bone operations were done, and the use of ligature was introduced to control hemorrhage in amputations.

The study of anatomy was carried on intensively and great strides were made in orthopedic understanding and practices. Ambroise Pare has frequently been given credit for being the father of orthopedics, yet the term "Orthopedia" was not invented until nearly two hundred years after his time. Nicholas Andre, professor of medicine at the University of Paris, gave the title "Orthopedia" to a treatise which he published in 1741. He synthesized the term from the Greek roots orthos (straight) and pais (child) to express his belief that the idiopathic deformities of adolescence and adult life were due to an imbalance of the muscular system in childhood. However, the real founder of orthopedic practice, that is, "the mechanical straightening of the crooked child," appears to be Venel, who in 1780 established in Switzerland the first orthopedic institute in the world. During the next two centuries tremendous advances were made in all surgical procedures, but cutting operations were entirely too hazardous to permit of their general usage.

The really revolutionary period which has led to modern surgical and orthopedic practices occurred within approximately the past half-century. The wonderful achievements in surgery which are now being universally and unhesitatingly practiced can be attributed almost entirely to four men whose names in medical history will forever be immortal—Virchow, Pasteur, Lister, and Roentgen. These men made the technic of the work possible, but Crawford Long, in our own Southland, first used ether anaesthesia which gave satisfaction, safety, and "comfort of soul" to the patient undergoing the operative procedure. Although Long was the first to use ether in operation, credit for its clinical use has been attributed by some to another man. Dr. Morten, a dentist who practiced in Boston, popularized the method.

Prior to this period, there were few men who confined their work entirely to orthopedics, and it can be said without disrespect that they were generally speaking a group of dignified "harness makers." The correction of crippling deformities and diseases was a prolonged, tedious and frequently painful procedure. Corrective apparatus was the vogue and these appliances were worn for months or years by the poor patients. The nearer to being a mechanical genius was an orthopedist, the greater was his reputation and practice. Frequently all of the operative work was done by the general surgeon and the orthopedist was called upon to devise an apparatus much as the modern brace maker is used by the orthopedist of today. How conditions have changed with the advent of Listerism and asepsis!

No sketch of the development of orthopedic

surgery would be complete without the inclusion of its most prominent figure of the past century —Sir Robert Jones of England. This world famous character was the apprentice and nephew of the great Hugh Owen Thomas, who, in turn, with his four brothers, had assisted his eminent father in orthopedic surgery. "Our profession," says Moynihan, "has rarely produced a mind so original and independent as that of Thomas." He knew little of pathology, but of the changed appearance and function of morbid bones and joints and of the means other than open operation to be used to aid nature in its effort toward restoration, no man ever knew so much. He was a veritable mechanical genius and enjoyed a tremendous practice. Orthopedic surgery was, to Owen Thomas, sometimes a matter of enforcing rest, sometimes of fitting corrective or supportive appliances, sometimes of manipulations, and sometimes a wise combination of the three. All of this knowledge and experience was inherited by Sir Robert Jones, to which he added the practice of surgical methods which Lister had made possible. As an operator and as originator of surgical procedures for the care of orthopedic cases, he was among the greatest who have ever lived. Shortly after the beginning of the World War it became evident that in order to care for the wounded and crippled soldiers there would be a great demand for men trained in orthopedics. At the head of the orthopedic office of the war department was appointed Sir Robert Jones. Under his guide, counsel, and example a large number of skilled workers were soon taught to assume these important positions. The genius of Owen Thomas and the skill of Sir Robert Jones found their highest expression in the care of our wounded. The methods of these two now became common knowledge and the heritage the world over for all of those who sought to enjoy them. Moynihan says, "In the practice of Orthopedic surgery the spirit of Sir Robert Jones will live forever."

Following the tremendous experience which the war afforded, orthopedic surgery rightfully assumed its position as one of our most important specialties. Even after the advent of asepsis many surgeons were reluctant to invade osseous and joint structures, but war time experience had proven that these operations were not only possible but that they could be done with safety. Within the past twenty to forty years perhaps more has been accomplished for orthopedics than in all of its previous history. It has found its proper place in the medical curriculum and special postgraduate courses are being taught. Various institutions have been erected throughout the world for the especial study and care of orthopedic cases. Volumes of research work have been published and more is known about the chemical, physiological and pathological changes which take place in diseases, injuries, and abnormalities of the osseous system than ever before. Guinea-pig inoculation tests, biopsy tests, serological, histological and bacteriological studies have become more valuable. The x-ray not only makes the diagnosis of many bone diseases possible but it is indispensible in the treatment of fractures and certain other osseous lesions. The public is aware of this fact now and frequently the roengenologist is the first to be consulted by the patient. Electrodiagnostic apparatus have been devised and the moving picture is freely used for teaching purposes and for demonstrations. Various measures for physiotherapy, hydrotherapy, chemotherapy, phototherapy and electrotherapy have come into use. Heliotherapy in the care of tuberculous bones and joints has reached a high degree of perfection as in the Rollier Institute at Leysin, Switzerland. However, the surgical fusion of these joints by intra and extra articular fixation has become more and more popular. The credit for introducing bone graft surgery rightfully goes to Dr. Fred Albee of this country. With modern methods of aseptic technic and preparation before operation these cases may be undertaken with impunity. Months or years of recumbency in the treatment of tuberculous joints have been shortened by fusion operations. Tuberculosis of the spine is treated with the tibial bone graft of Albee or the Hibbs type of multiple osteogenic bone chip operation. Various modifications of these two procedures have been introduced. Bone grafts may be inlay, onlay, intramedullary, or osteoperiosteal. Pegging and mortising procedures are numerous and as ingenious as the cabinet making skill of the individual surgeon

permits. Someone has facetiously remarked that there are two kinds of surgeons—carpenters and plumbers. The orthopedist, as a carpenter-surgeon, is aided greatly by the many new instruments and tools which have been developed. There are various chisels, gauges, hooks, screws, plates, clamps, pins, etc., but the electric motor with its sterilizable shell and various attachments is of particular importance in doing good bone surgery. The use of various metallic appliances for the internal fixation of fractures has largely been discarded. Stainless steel for removable fixation or for temporary traction appliances has recently been introduced and is used with great satisfaction. Boiled beef bone, ivory and celluloid pegs and plates are available, but are not considered as satisfactory as autogenous bone grafts. The treatment of scoliosis has improved greatly with newer corrective measures and with spinal fusion. Great progress has been made in relieving the sufferers of infantile paralysis. Tendon transplantations and joint stabilizing operations are fairly well standardized. Osteotomies to correct deformities are unhesitatingly done and bones may be either lengthened or shortened by operation. Spastic paralysis can be benefitted by appropriate nerve and tendon operations. Royle and Hunter in 1924 introduced the operation of sympathetic ganglionectomy for spastic cases. The increase in temperature of the operated extremity provoked a great deal of study of this new operative procedure. Now the operation is used rather extensively for the relief of many circulatory deficiency conditions with which the orthopedist comes in contact. The treatment of congenital dislocation of the hip has greatly improved with the advent of open reductions. Various hip joint reconstruction operations are now fearlessly performed with happy outcomes. Some of our medical forefathers would have been horror stricken at the thought of such procedures. Many other types of extensive bone and joint operations are being performed without hesitancy. Arthroplasty of joints is a standardized procedure. There is a considerable amount of tendon, nerve, and skin surgery which comes within the domain of orthopedics. Congenital deformities and those resulting from burns or other injuries can be greatly benefitted by modern methods. Orthopedic apparatus has been greatly simplified and braces are made out of a much lighter material. Splints are made of light aluminum which is permeable to x-rays. Traumatic surgery has made such great demands on the orthopedist that now fractures are referred to him directly and many insurance companies and large corporations make provision for his services to their injured. With the ever increasing accidents as the result of modern high speed machinery it is likely that soon traumatic surgery will be a distinct specialty. The handling of fracture cases has been made much easier with modern fracture tables, portable x-rays, improved plaster of paris technic and the new machines for reducing and maintaining the fractured part in position. Whereas, prior to the days of Lister, most of the patients with compound fractures died. Now it is rarely that one becomes infected and very seldom that amputation is necessary.

Many other examples could be cited to illustrate the tremendous strides orthopedic surgery has made in the past half-century. A few years ago it was practiced only in the large cities. Now both coasts and the interior of our country are richly supplied with splendid clinics, many of which have a well-deserved international reputation. Orthopedic surgery has developed from a very humble beginning and no longer is confined merely to the "straightening of the crooked child." Campbell, in his recent textbook, describes it as "that branch of general surgery which deals with diseases and injuries of the bones, joints, muscles, fascias, and nervous system which may impair function or cause deformity at any age of life." Every student preparing for the practice of orthopedics should realize the responsibilities of this specialty. He should be thoroughly versed in the fundamentals of medicine and, in addition, he should be well grounded through knowledge and practice of the basic principles of general surgery. The work is difficult and exacting but the field has only recently been opened and the opportunities for development and self-expression are numerous. Let us hope that with the passing of years orthopedic men will continue their harmonious relationship with medicine and sur-

gery in general and that they will justify the faith and confidence that has been placed in them.

Note: In preparing this paper it was necessary to copy certain data from the works of others. To these authors I wish gratefully to give due credit in the appended bibliography.

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MANAGEMENT OF CROSSED EYES IN CHILDREN

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Spartanburg, S. C.

Recent progress in the correction of crossed eyes has modernized our knowledge of the management of strabismus cases. Methods were offered for the correction of crossed eyes at least two hundred years ago, but very little progress had been made before fifty years ago. During the last ten years, the ophthalmologist has seen this type of work advance steadily. The experiences of our elders have shown their mistakes in correcting squints and have given us a better understanding of the causes of squints and the methods of correcting them.

Many parents seek the advice of physicians because their children have crossed eyes. Generally the parents consult the family doctor or the pediatrician first and for this reason they should know what can be done for crossed eyes and how to advise the parents. Frequently parents have refused the advice of glasses and treatment of the child's eyes in early life but come to the doctor again after the child starts to school. The teacher sends a note to the parents saying the child has crossed eyes or cannot see the blackboard and that they should see a physician. Too often the child with crossed eyes is shunned by the other children, is teased because of his defect and is even regarded as a mental cripple. One can now see how such a child easily gets behind in his studies. When the child starts to complain, the parents are ready to cooperate and they want the child to have a refraction and want him started on exercise. Every child is entitled to a correction of his refractive error and he is handicapped immediately when a needed correction is refused by the parents. Children should be refracted under a complete cycloplegia with atropine as the success of the refraction depends entirely upon the oculist. Subjective examination is valueless in young children.

Glasses should be worn constantly, when the error of refraction is found to be such that glasses are needed for its correction. The time to begin is early and we often put glasses on infants under one year of age and they wear them without any serious difficulty. Of course, binocular vision is not present at birth but is usually noticed about the fourth week of life. After this time, if a squint develops, we should examine the macula with the aid of the ophthalmoscope to be certain there is no pathology present. Every child should have binocular vision and when this is not present, the squinting eye must be stimulated in some way so as to restore binocular vision. Orthoptic training has been advised by a great number of oculists but its benefits have undoubtedly been exaggerated. Orthoptic training is of greater value when instituted before the age of six years, after this time the results are doubtful. In my experience, I find that the poor vision in a squinting eye can be greatly improved by wearing a patch over the fixing eye at regular intervals for several weeks and thus make him use the squinting eye. This is an old method and very simple and probably gives as good results as any. The best results are seen in squinting eyes with a

vision of at least 20/60 and there are the cases considered likely to respond to any treatment.

Loss of binocular vision and the power of fusion is due to an imperfect brain control. It is impossible to develop fusion in some children and an early operation is indicated here in order to aid the eyes in developing fusion before a definite squint has occurred. When the diagnosis of true alternating strabismus is made, the child should have an immediate operation as glasses seldom correct this condition. In an actual squint with a normal or practically normal refractive error, it would be useless to prescribe glasses and an operation should be advised for its correction. If an actual squint is not corrected early, the squinting eye rapidly loses its visual acuity and amblyopia exanopsia is developed. One is not justified in stating any definite age of the child is the time for operation. We have operated many cases as young as two and a half to three years of age and obtained excellent results.

We must be sure that the squint is not due to paralysis of nerve or muscle. If it is a paralytic case, we try to determine its cause and treat that. Operative correction is not advised until we are sure the paralysis will not recover. Some of the more common causes of paralytic squints are syphilis, birth injuries and intracranial complications.

Frequently an intermittent type of squint is seen. The mother states that the eyes are usually straight but occasionally one or both eyes appear crossed. The proper correction of the child's refractive error is usually all that is needed to prevent an actual squint from developing. Too often, parents are told to leave the children alone and they will outgrow the squint. This is true in some cases but when the tendency to squint is present, due to a weak muscle, any irritation from illness, injury or otherwise may make the squint actual. This type of case usually clears up when the irritation is removed but will certainly bear observation.

In conclusion, it is well said that in view of our present knowledge, there is no excuse for anyone to have crossed eyes. The earlier they are treated, the better the results will be. The management of crossed eyes is divided into three stages: (1.) Correction of any refractive error. (2.) Stimulating binocular single vision. (3.) Operation. Many cases are cured in the first stage and no case should undergo the last stage (operation), without passing through the first two. Consequently, if we want a permanent cure, we must place the eyes in their natural position, by operation, so as to aid in stimulating binocular single vision, when stimulation has failed before operation.

OCONEE COUNTY MEDICAL SOCIETY

Resolutions

WHEREAS, it has pleased Almighty God to remove from our midst our brother and co-worker, Dr. Joseph S. Stribling, therefore, be it resolved:

FIRST, that the Oconee Medical Society feel a personal loss in his passing, and our appreciation of his useful life spent in the practice of our profession.

Dr. Stribling was graduated from Bellevue Hospital Medical College, New York in 1888 and began the practice of medicine at once in Seneca, associating himself with Dr. O. M. Doyle. He continued here with only a slight interruption to the day of his death, rounding out 48 years.

It could be truthfully said of him that he gave freely of his time and services—not only to those who could pay, but at times he actually spent himself to the point of exhaustion in serving those who could not pay.

In season and out of season, he was always ready to help his fellow-man.

Not only was he useful in his profession both to his fellow practitioners and to the public, but as a citizen, he had lofty ideals of justice and the right. His feet were firmly planted on these great foundation stones.

SECOND RESOLVED: that we extend to his bereaved family our sincere sympathy, and that a copy of these resolutions be spread upon the minutes and that a copy be sent to his family.

E. C. Doyle,
J. W. Bell,
W. A. Strickland.

PRESIDENT'S PAGE

DEATH OF PRESIDENT SAMUEL E. HARMON

At the time of the election of Dr. Harmon to be President Elect of the South Carolina Medical Association the Journal published the following editorial.

"One of the foremost leaders in organized medicine in South Carolina was elevated from the Council to be President Elect at the Charleston meeting, May 1, 1934. Dr. Harmon early in his professional career became imbued with the unlimited possibilities of organized medicine as the means whereby the physician may not only promote his own interests but particularly render a larger service to his clientele and the community in which he lives. Dr. Harmon was born in Lexington County, South Carolina, in the Saluda River Valley which is now under water as a result of the Lake Murray development. The son of Frederick Harmon the Second and Elvena Seay, of German Irish parentage. Dr. Harmon attended the country schools in the vicinity of his birth and later the city schools of Columbia and Newberry College. In 1899 he graduated from the University of Tennessee Medical School, Nashville. Subsequent to his graduation he did a general practice for some ten years. During the period of his general practice he was preparing himself for general surgery by frequent visits to the great medical centers of this country and taking post graduate courses there, such as the Post Graduate Medical School and Hospital, New York. About twenty-five years ago Dr. Harmon limited his practice to general surgery.

At the Aiken meeting of the State Medical Association in 1918, Dr. Harmon was elected Councilor from his District and in 1923 was made Chairman of that body, a position which he has held with commanding fidelity until he was honored with the office of President Elect. It is not too much to say that Dr. Harmon has adorned his long connection with the Council with rare courage, optimistic vision, and constructive leadership. He will bring to the Presidency a year hence an experience in organized medicine of invaluable scope. This new honor, therefore, has come to one preeminently qualified from every standpoint."

The news of the sudden death of President Harmon during the Christmas holidays was received with genuine sorrow throughout the state. He had fulfilled in every particular the confidence of his many friends that his Presidency would be forever significant as a forceful administration of a leader whose knowledge and interest in organized medicine in South Carolina has been rarely equalled. Dr. Harmon was a militant supporter of organized medicine. He believed that in this way the profession had a mighty privilege of dynamic possibilities for good to the public and to the profession itself. Dr. Harmon was ready at all times, regardless of inconvenience to himself, to respond to the call of his fellow physicians anywhere in the State for any assistance within his power to render. He will be sorely missed in many circles of usefulness and honor in South Carolina. Upon assuming the office of President Dr. Harmon had well thought out plans for the meeting of the State Association in Greenville, April 21, 22, 23, 1936. It will be the purpose of the new President, Dr. R. C. Bruce of Greenville, and the various committees appointed by President Harmon to carry out these plans to the letter as far as posible.

Aside from his interests in South Carolina medicine Dr. Harmon was a Fellow of the American Medical Association, Fellow of the American College of Surgeons, and a member of the Southern Medical Association. He was a member of Ebenezer Lutheran church, and was active in the Masonic order, being affiliated with Acacia Lodge, Ancient Free Masons, and also with all higher bodies of the York rite, including Columbia commandery, No. 2 Knights Templars. He was also a member of Omar Temple, Ancient Arabic order, Nobles of the Mystic Shrine.

Editor.

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OF THE
South Carolina Medical Association

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JANUARY, 1936

THE MEDICAL COLLEGE AND ITS NEEDS

For well over a hundred years South Carolina has been supplied with its physicians by the Medical College of the State of South Carolina. Nearly three fourths of its doctors in smaller towns and rural districts are graduates of the School.

In 1913 the State recognized the value of a Medical College as a source of supply of medical attention for its people, and the college became a state institution, a place where its native young men and women could find competent instruction in the art and science of medicine without the difficulty and added expense of attendance at distant schools.

The increased difficulty of entering the limited classes at medical schools in general makes a state school essential for supplying the medical needs of South Carolina. Yet for some years past the state has reduced the budget annually so that for a long time the college has been running on a shoe string—and a very frayed string at that. From $142,000 in 1930 the appropriation shrunk to $52,000 in 1933 and has expanded unwillingly to $80,000 in 1936. Meantime repairs, replacements, and new equipment wait on funds, such teachers as are paid remain well underpaid, and the college declines.

These things have been known with concern by Trustees and Faculty for many years. They have been known but overlooked by the legislature almost as long. Now the critical point is reached for a drastic change.

The Council on Medical Education and Hospitals of the American Medical Association has made a survey of the college, finds it lacking largely in respect to personnel, and makes very pertinent suggestions. Its report covers briefly the history and organization of the college. It notes that the maximum salary paid full time professors is $3,100. It describes the buildings as "old and poorly arranged." It remarks on various departments, concluding almost every summary with the statements that without a larger competent staff the department cannot do satisfactory work. It speaks of the "almost impossible load" in one department.

The final comments of the inspectors are that "the Dean of the School of Medicine is an unusually high type and competent Dean.

"There is an excellent spirit throughout the institution and a beautiful demonstration throughout the four years of the course of the highest ideals of the practice of medicine.

"The relationship of the school of medicine to Roper Hospital and its Out-patient Department offers unusual facilities for the development of a high grade of medical education.

. . . Adequate support must be supplied to provide such personnel as not already available.

"In general the preclinical departments are inadequately staffed.

"If this college is to meet satisfactory standards it would seem to be important (1) that the State of South Carolina provide adequate funds for the conduct of the College; (2) that the Preclinical Departments be adequately staffed with competent teachers . . . . "

The implication in the comments is that unless changes be made, the school must lose its rating as a Class A College. Any other class of Medical School is unthinkable for students and teachers. South Carolina must put up—or shut up its chief source of medical care for her people.

J.I.W.

NEWS ITEMS

The Maternity Institute held by Miss Anita Jones of the Maternity Centre New York, in Charleston Dec. 2-6 was excellently attended. This Institute was sponsored by the State Board of Health, The S. C. Public Health Association and the County and City Health Departments of Charleston. The Health Officers of the State attended one day. Miss Jones lectured to the Senior class of the Medical College and to the Senior class of Roper Hospital.

Welcoming talks were made by Dr. Jas. A. Hayne, State Health Officer, Dr. Ben F. Wyman, of the Department of Rural Sanitation, Dr. Leon Banov, Charleston Health Officer, Dr. L. O. Wilson of the Committee appointed by the State Medical Association to study the high maternal death rate in S. C. and Dr. Lesesne Smith, of the Maternal and Infant Hygiene Committee of the State Board of Health.

Renewed enthusiasm for the teaching of what constitutes adequate Maternity care, was a result of the Institute, with much though stimulated as to how to make such care available.

The Twentieth Annual Session of the American College of Physicians will be held in Detroit with headquarters at the Book-Cadillac Hotel, March 2-6, 1936. Dr. James Alex Miller, of New York City, is President of the College and his address will be on "The Changing Order in Medicine."

The American Board of Ophthalmology will hold an examination at Kansas City, May 11, at the time of the meeting of the A. M. A. All applications and case reports must be filed at least sixty days before date of examination. Address Dr. Thomas D. Allen, Assistant Secretary, 122 South Michigan Ave., Chicago, Illinois.

South Carolina Pediatric Meeting, Tuesday January 28, 1936.

Luncheon at Francis Marion Hotel, 1 P.M.

1. Remarks by the President—William Weston, Jr., M.D.

2. Clinical Case Reports—Joseph I. Waring, M.D., Wythe M. Rhett, M.D.

Limited to 5 minutes each.

3. How can the Pediatrician and the South Carolina Society for Crippled Children Work Together. Julian P. Price, M.D.

Limited to 15 minutes.

4. What We Hops To Do in South Carolina Under the Child Health Bureau—D. Lesesne Smith, M.D.

5. A Discussion of Acute Anterior Poliomyelitis.—Opened by invitation by Wilburt C. Davidson, M.D., Dean of Medical School, Duke University, Durham, N. C.

PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT NO. 296 (27848)
October 11, 1935

Service of Dr. G. P. Richards

Student Quantz (reading):

Negro female, age 36 years, admitted 4-1-35, died 7-17-35.

History: Cough and dyspnoea on exertion for 7 months. Unable to sleep at night without being "Pillowed up." Progressively increasing swelling of feet for 1 week, worse at night. Swelling of abdomen of 3 days duration. No cough before P. I.; no hemoptysis or night sweats. Pleural effusion 9-34. No statement on history as to fever. Nocturia 3-4 times; no burning or urgency. Menses regular, 28 day cycle, 3-7 days duration. Last menses Sept. 1934. No digestive symptoms. Injury to left breast a few days before admission.

Family History: Irrelevant. Married 1925, no children.

Exam: Fairly well developed and well nourished woman. Temp. 100, pulse 98, resp. 36 per minute. B.P. 176-120. Skin, eyes, ears, nose normal. Teeth dirty and carious. Cervical lymph glands palpable. Left breast enlarged and firm, 2 draining sinuses in left axilla. Lungs: Tactile fremitus, voice and breath sounds slightly greater over left lung. Dullness over both bases posteriorly, especially on left. Mediastinum normal. Cardiovascular: "Heart enlarged on percussion. Apex beat not satisfactorily located. Regular in rate and rhythm. Systolic murmur over mitral and aortic areas. A2 greater than P2. Radials are not tortuous or thickened." Abdomen: greatly distended. "Large smooth firm mass extending up to umbilicus." Some tenderness in R.L.Q. In sitting up position, tympany in upper abdomen, flatness in flanks; fluid wave present. Liver and spleen not felt. Edema of lower extremities noted.

Lab: Urine (4-2-35; 6-20-35) voided, S.G. 1.024, 1.020; alb. 0, 1 -; sugar, acetone, casts neg.; leukocytes 0-10 HPF; RBC 0, 0. Blood (4-2-35, 4-7-35, 6-20-35) Hb. 58, 46, 45 per cent (D). RBC -; 4,120,000, -. WBC 4,750, 5,350, 3,150. Archromia 2 plus. Polys 74, 75, 86 per cent. Lymphs 23, 22, 11 per cent. Monos 1, 2, 2 per cent. Eosinos 2, 1, 0 per cent. Blood Wass. neg. Pleural fluid 6-21-35): 210 cc. lemon-colored fluid from right chest, turbid, cells 1 plus, lymphs predominating; no bacteria; Routine culture "Large gram-positive bacillus"; Culture for t.b. neg. Culture of pus from breast (for t.b.) (4-17-35) neg. X-rays of chest (Sept. 1934, 4-4-35) See chart.

Course: Temp. of intermittent type throughout hospital stay, ranging upward to 100-103 each night, down to normal or below in A.M. Pulse followed temp. Resp. 20-30 during stay. B.P. remained about 160-110 for first few weeks, falling gradually to 110-80 on 6-19, not recorded after this. Dyspnoea improved on digitalis, edema gone after 6 days hospitalization. On 4-8 complained of pain in right shoulder and left axilla. On 4-24 a new area of swelling was noted in left axilla. Sinuses continued to drain throughout hospital stay. On 4-26 complained of pain and soreness in "bottom of stomach," and these continued intermittently. On 6-10, dullness and absent breath sounds again noted in both bases, somewhat more than on previous exam; no new chest findings. 6-21 Fluid obtained from right chest, none from left. On 7-14 pt. noted to be "clouded" mentally, sleeping most of the time. "Groans when aroused and movement appears to be very painful." Became progressively weaker and died at 7:45 A.M., 7-17-35.

Dr. Lynch (conducting): Mr. Settle, what does this case suggest to you?

Student Settle: The cough, dyspnoea, edema and ascites all suggest cardiac decompensation. The abdominal mass is probably not related to the abdominal fluid, and it is my idea that it represents fibroids of the uterus. The lump

in the breast is probably a result of the breast injury. The draining sinuses in the axilla, continuing to discharge until death, suggest a tuberculous process there, probably a tuberculous adenitis. The fluid in the pleural cavities may be either of tuberculous or cardiac origin. The blood pressure shows a hypertension on admission, which gradually approached normal on bed rest.

I believe that this patient had a tuberculous lymphadenitis in the left axilla, and probably a tuberculosis of both lungs. Hypertensive heart disease, with decompensation, was probably present also. I believe that death resulted from the tuberculous toxemia and infection.

Dr. Lynch: How does that sound to you, Mr. Elders?

Student Elders: A history of cough for 7 months, with weakness, fever, anemia, suggests tuberculosis. The temperature curve is especially suspicious, rising as it does in the evening and returning to normal again during the night. The laboratory examination of the pleural fluid suggests that it was tuberculous. If the abdominal fluid had been of cardiac origin, I would have expected it to clear up when the edema did, and so I am inclined to believe that she had a tuberculous peritonitis.

Assuming that the patient had a tuberculosis of the lungs, it would seem logical that she later developed a generalized miliary tuberculosis. A polyserosistis is not uncommon in miliary tuberculosis. Here we have evidence of the involvement of at least two serous cavities. The abdominal mass could be part of the peritoneal tuberculosis. When there is a tuberculosis of the mesenteric lymph glands associated with a tuberculous peritonitis, it is not uncommon that masses are felt. But I also believe that she had a hypertensive heart disease, with some decompensation.

Dr. Lynch: What would you like to know in order to complete the diagnostic work-up to your satisfaction?

Student Elders: I would like to see the x-ray of the chest.

Dr. Rudisill: On a prior admission, in September, 1934, this patient was first referred to us for a chest film. At that time some fluid was noted in the bases of both pleural cavities. The heart shadow and the aortic shadow were moderately enlarged. The small portion of the lung fields that could be clearly visualized, showed no pathology. The second film, taken on April 4th, 1935, appeared very much like the first, as you can see here (demonstrating films). There is some clearing of the fluid in the left chest, and the lung parenchyma still appears normal.

Dr. Lynch: What do you think of that, Mr. Elders?

Student Elders: Most of the pleural effusions are tuberculous, but in this case it could just as well be of cardiac origin.

Dr. Lynch: Are there any comments from the attending staff?

Dr. Robert Wilson, Jr.: It is usually very much safer to make only one diagnosis, if that will reasonably explain every factor of the case. Essential hypertension must have been present, but I do not believe that her heart was failing, or that she had any symptoms directly referable to her blood pressure. In this case all the symptoms and findings, except the blood pressure readings, could have been due to tuberculosis. The dyspnoea could have been due to the pleural effusions, which I believe were of tuberculous origin. The abdominal distention and fluid suggest tuberculous peritonitis. There may have been a tuberculous pericarditis as well. Edema is not uncommon in long-continued wasting diseases in which an anemia is present.

If this patient had had a failing heart, I would have expected rales in the chest and a palpable liver.

Student Pernwerth: I would like to ask Dr. Wilson a question. Wouldn't you expect to hear rales in the chest in pulmonary tuberculosis almost as constantly as in pulmonary edema?

Dr. Wilson: No. I believe that rales in the chest are universal and constant in pulmonary edema, and they are very frequently not heard in pulmonary tuberculosis.

Student Pernwerth: Still it seems to me that hypertensive heart disease with decompensation could serve as well for the unit diagnosis as tuberculosis. We must admit that the patient had essential hypertension. Cardiac decompensation could cause all the symptoms except the continued fever, which might easily be

explained on the basis of the low-grade suppurative process in the breast. The bilateral pleural effusions in 1934 might easily mean the beginning of decompensation at that time, when symptoms first became evident.

Dr. Chamberlain: I do not feel quite so strongly impelled to confine myself to one diagnosis, whether it be either tuberculosis or cardiac decompensation. Why not let them both have a part? The breast would not have continued to drain so long if the condition there had been a suppurative mastitis following trauma. And the blood count suggests a more chronic type of infection. I believe that the condition in the breast probably was tuberculous. But I believe that the first x-ray picture gives rather definite indication of heart failure, and the dyspnoea, edema and cough all tend to corroborate it. We cannot deny the existence of a hypertension: it was present for at least two weeks. That it fell to normal after that time may signify the hoped-for improvement in the cardiac situation, or it may mean the gradual onset of complete decompensation. She had no characteristic heart findings to help us with the problem.

The development of mental symptoms towards the end may have been due to a terminal tuberculous meningitis, which is frequently overlooked in moribund patients.

Dr. Lynch: Everything in this case except the blood pressure determinations can be explained, after the autopsy, on the basis of tuberculosis. The breast was definitely tuberculous, and the breast lesion appears to be the oldest lesion in the body. Altho there is definite caseation of the hilar lymph nodes, as one will find in primary pulmonary tuberculosis ("childhood tuberculosis"), there is no parenchymal lesion to correspond to the hilar lesion. Still, I fancy that her initial infection was in the lung. Apparently from the tuberculous lesion in the breast and axillary lymph nodes, an acute miliary tuberculosis developed, with a tuberculous polyserositis. There was a tuberculous pleurisy (bilateral), peritonitis, pericarditis, and meningitis. The enlargement of the cardiac area, manifest by x-ray, was doubtless a result of the pericarditis, as there was no demonstrable myocardial hypertrophy at the time of the autopsy. The edema probably resulted from a combination of tuberculous pericarditis and anemia. The anemia itself was probably of tuberculous origin; with widespread tuberculosis in all organs examined, it is logical that there should have been a tuberculous involvement of the bone marrow.

The meningitis was probably the cause of the cerebral symptoms for the last few days. But as you can see in the specimen, the tuberculosis of the meninges was of longer duration than that, as there is rather extensive caseation there, with some actual extension into the brain itself.

The abdominal mass was a fibromyoma of the uterus, which was quite large, about the size of a grapefruit.

I want to draw attention to one thing in particular in this case, and that is the common belief, prevalent both among patients and physicians, that an injury to the breast can cause a lump to develop there. Except when the injury to the breast is severe enough to cause a hematoma, I do not believe that injury will cause a lump. Rather, it takes an injury to call a woman's attention to a lump that has been present in the breast for some time. Generally speaking, it is not wise to wait and see if a lump in the breast, first noted after injury, will subside. Frequently cancers of the breast lose all their possibilities of cure in that time. If the lump is definitely not a hematoma, and if there is no evidence of suppuration in the breast, there is no reason for waiting.

EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

RELATION OF BRONCHIECTASIS TO INFECTION OF THE PARANASAL SINUSES

By Dr. G. E. Hodge,
Arch. Otolaryn., Nov., 1935, p. 537

This relationship has been brought forward during the past fifteen years. Added interest and authority has been given by bronchoscopy and roentgenology, and by thoracic surgery and by the knowledge of the reaction of the mucous membranes of the respiratory tract to allergy and infection. Causal relationship between persistent bronchial suppuration and sinusitis was pointed out as early as 1914 by Thompson. It soon became established that a thorough examination of the sinuses should be made of all cases of pulmonary suppuration (Sergent, Rist, Webb, Gilbert and others) and that this suppuration tends to clear up unless kept active by sinusitis. (Mullin—Graham). So evident was this that Wasson in 1929 suggested the term broncho-sinusitis for a general infection of the entire respiratory tract.

The incidence of infection varies from 58 per cent (Quinn and Meyer) to 82 per cent (Clerf), with the maxillary sinus as the chief offender.

Routes of infection from sinuses to lung:

1. A connection exists between the lymphatic drainage of the maxillary sinuses and the lung (Mullin and Hyder).

2. Inhalation may also be the route of the infection from the sinuses to the lung (Pfhaler, LeMee, Bouchet); this has been proved by Quinn, Meyer, and McLaurin, in showing oil in the thorax after the instillation into the nostrils or antra of sleeping patients.

"These experiments clearly demonstrate that chronic sinusitis must play an important part in infections of the chest and that infection reaches the thorax chiefly by inhalation and by the lymphatic routes—These cases are often for years diagnosed as tuberculosis—The assumption then is that following sinusitis chronic bronchitis develops and in course of time bronchiectasis!" The method by which this occurs turns about the virulence of the organism, the individual susceptibility and in children upon immaturity of development, as is especially illustrated by the frequency of bronchiectasis in childhood; while Anspach suggested that atelectasis is the precusor of bronchiectasis in adults.

A triangular shadow at the base of the lung is a sign of atelectasis and bronchiectasis of the lower lobe. The drainage from this area is interfered with by thick secretion or in allergic swelling of the mucous membrane.

Bronchiectasis is thought to be produced by a deficiency of vitamins, a sinusitis from a deficienty of vitamin A. But a diet high in vitamins and deficient in protein will produce suppurative sinusitis and otitis, and a diet alone will not cure sinusitis.

Histocytes are the defensive cells in the acute infection while it is the plasma cells in the chronic cases.

Since hypoglycemia and ketosis play an injurious part in chronic antrum infection and bronchiectasis Sippe uses dextrose in their treatment; this also overcomes their inability to retain water in the tissues.

The present evidence tends to show that subsequent bronchial infection occurs on a suitable soil; such soil is frequently finding its occurrence in childhood.

Treatment should be of the upper respiratory; first of the sinuses, tonsils and adenoids, then of the lungs by bronchoscopic suction; postural treatment and vaccine therapy.

SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

"THE QUESTION OF HOMOPLASTIC SKIN GRAFTING"

Not infrequently in patients having suffered extensive third degree burns there does not seem to be sufficient intact skin from which to provide grafts for the granulating area. Moreover in these seriously ill patients there is a natural disinclination to mutilate still more skin surface or subject them to the further discomforture of removal of skin from the donor site. It is in such cases that securing skin for grafting from a source other than the donor would be the ideal procedure—provided that it were possible. Concerning this there is considerable controversy. While a number of cases have been reported as successful, upon a critical analysis they do not seem to satisfy the necessary postulates and accordingly have to be discounted. That the procedure is impossible of accomplishment and may even be dangerous is the opinion of Drs. H. M. Trusler and H. D. Cogswell of Indianapolis—J. A. M. A. 104: 2076 June 8, 1935. They present five cases of their own and a very good discussion of the present day thought on the subject.

Transplanting skin from one place to another on the same body is known as autoplastic grafting. It is well recognized that this is a highly successful procedure. Transferring skin from one person to another is termed homoplastic grafting. It is concerning the possibility of this latter procedure that there is still some doubt. As a rule the grafts fail to take and have completely disappeared within two weeks. However in some cases the homo-grafts appear to take and look as healthy as auto-grafts made at the same time. This is much more likely if the patient and the donor have no blood incompatibility. It is this group of cases which accounts for the number of successful results reported. It is the contention of the authors that in spite of the favorable primary take, these grafts do not remain viable, but slough after two or three weeks as a rule. In one of their cases six weeks elapsed before necrosis began. When sloughing takes place the appearance is often that of infection, but in their opinion infection is a secondary development, as might be expected, and not a primary factor.

Homoplastic grafting is detrimental to healing, and even may be dangerous to the life of the host. In two of the author's cases homoplastic skin grafting was followed not only by necrosis of the grafts but by chills and septic temperature, even though the bloods of their donors were compatible. In one of these cases the grafts took, homoplastic and autoplastic alike, but after several days the child became toxic and died.

The failure of homoplastic skin grafting is considered as due to a biologic incompatibility —an antagonism of the host to the foreign protein of the skin of the donor. Technical error and infection can be controlled and can not be held accountable.

"The fact remains that, as commonly practiced, homografting of skin is useless, deleterious and unnecessary. Massive destruction of skin is usually due to a burn, and the individual who survives such an injury will have sufficient intact surface to make healing possible with the aid of grafts from the patient's own skin."

The advisability of early skin grafting can not be over-emphasized. By it much deformity, disfiguration and suffering will be prevented, and even lives saved.

SOCIETY REPORTS

OCONEE COUNTY MEDICAL SOCIETY

The Oconee County Medical Society met at Seneca, Monday night, December 9, 1935, Dr. J. E. Orr, President in the Chair.

The minutes of the previous meeting were presented orally by the Secretary.

The business meeting was then entered into. A report of the Hospital Committee was made by Dr. J. N. Webb and Dr. E. C. Doyle. The suggestion was made that each member exert his influence with the representatives in congress in behalf of the hospital.

The Secretary presented a communication from the Dean of the Medical College calling on all doctors to see their representative in the Legislature in regard to increased appropriation for the school.

Dr. J. H. Johns discussed the proposal at length and asked for information as to the real need of increased funds. Dr. Johns was requested to write the Dean for further information.

Dr. E. C. Doyle reported resolutions on the death of a former member, Dr. J. S. Stribling of Seneca. These resolutions were adopted by a rising vote.

On report of Censors Drs. Joe Johnson and V. W. Rhinehart were elected to membership. Election of officers resulted as follows.

Dr. W. C. Mays, Fair Play, S. C., President.

Dr. J. T. Davis, Walhalla, S. C., Vice President.

Dr. E. A. Hines, Seneca, S. C., Secretary.

Dr. Harry Ross was elected delegate to State Medical Association with power to appoint his alternate.

The Society entered into the Scientific Program. Dr. J. W. Jervey, Jr. of Greenville presented a paper on the Upper Respiratory Infections. The paper was highly complimented for the practical applications of same by the general practitioner.

Dr. Harry Ross presented a Case Report of Black Water Fever, which was discussed by Dr. Harper of Anderson, Dr. Hines of Seneca and others.

Dr. E. A. Hines presented a patient with Leukemia which disease was discussed by Dr. Frank Wrenn, Roentgenologist of the Anderson County Hospital and many others.

Dr. R. C. Bruce, of Greenville, President Elect S. C. Med. Asso. and Dr. Buck Pressly, Councilor 3rd District were present as visitors.

A delightful Dutch dinner was enjoyed by the members of whom the following were present, Drs. E. C. Doyle, Johns, Orr, Ross, Webb, Simpson, Hines, Davis, Bell, Mays and members elect, Johnson and Rhinehart.

E. A. Hines, Secretary.

COLUMBIA MEDICAL SOCIETY

The annual election of officers was held at the Columbia Hotel, December 9, 1935, at 8:30 P. M., Dr. O. P. Mayer, presiding.

Minutes of the previous scientific meeting was read and adopted.

Dr. O. P. Mayer, President, presented a brief summary of the activities and financial status of the society during the year 1935, and in closing thanked the society and committees for their cooperation.

Election of officers was next in order, Drs. Adcock, Cheatham and Quattlebaum acted as tellers.

Dr. Theo. M. DuBose, Jr. was elected president for the year 1936 and was escorted to the chair by Dr. Hutchinson and Dr. Rodgers.

Dr. David Adcock was elected Vice President. Dr. Benj. Rubinowitz was reelected Secretary. Dr. Thomas Dotterer was reelected Treasurer.

Delegates elected for 2 years were Dr. Floyd Rodgers, Dr. Manly Hutchinson and Dr. Watson Talbert. Dr. Walter Bristow was elected delegate for one year to fill the unexpired term of Dr. T. M. DuBose, who by the election to the presidency became automatically a delegate. Dr. E. W. Barron is a hold over delegate for one year.

Dr. A. F. Burnside was elected to serve on the Board of Censors for three years. The hold

overs on the board are Dr. Manly Huntchinson and Dr. H. H. Plowden.

Dr. DuBose announced that he will appoint committees for year 1936 at a later date.

There were 40 members present.

Society adjourned at 9:45 P. M.

Respectfully submitted,

Benj. Rubinowitz, Secretary.

EDISTO MEDICAL SOCIETY

The regular meeting of the Edisto Medical Society was held Dec. 19, 1935, at 2:00 P. M., at the Hotel Eutaw with the president, Dr. Jas. A. Forte, presiding.

Dr. E. W. Barron read a paper on "Care of the New Born," and Dr. T. D. Dotterer read a paper on "Infant Feeding." Both papers were very interesting and were freely discussed.

Those present were Drs. Browning, Mack, Matthews, C. I. Green, Schiffley, Shecut, Brabham, Mobley, Bolin, Black, Lowman, Eargle, Forte, and Glennan.

Dr. Browning stated that there was a man practising at Elloree who was a chiropractor and did not have a license to practice medicine. He asked that something be done to stop this sort of thing.

Respectfully submitted,

H. M. Eargle, M.D.,

Sec. Edisto Medical Society.

TRIBUTE TO DR. WALLER H. NARDIN

In the recent death of Dr. W. H. Nardin the Anderson County Medical Society suffered a keen loss. For more than a third of a century he was an active member of this Society, and his sound judgment and wise counsel will be greatly missed. In recording this, our tribute of respect to his memory, we make no effort to catalog the numerous honors that were his during the thirty-five years of active practice. Rather do we wish to evaluate his particular contribution to our professional and community life.

Dr. Nardin was a student. He built up an excellent library, and a well chosen list of medical journals were always in evidence in his office. He kept up with advancing medical thought, but he had decided opinions of his own; and when those ran counter to medical opinion, he followed his own judgment. For instance, he believed and practiced that for short-office operations choloroform was the anesthetic of choice. And in doing many thousand office operations he developed a rare skill in supervising the administration of chloroform.

Dr. Nardin was the first doctor in Anderson who became a specialist, and for a period of more than twenty years he had a very large practice in his chosen field. He demonstrated to the profession of this county that the ethical technique is quite successful in building up a referred practice. To him this was one of the "durable satisfactions" of his professional career.

The outstanding community service that Dr. Nardin rendered was his work among boys. For thirty-five years he was father confessor, big brother, buddy and pal to the high school boys of Anderson. During these years he gave to each succeeding group freely of his time and advice and many boys—now men—in widely scattered places would gladly join us today in paying tribute to him for this unselfish service. To him during the long evening days of his last illness this work for his boys was one of the "durable satisfactions" of life.

No appraisal of Dr. Nardin by one who knew him well would be complete that did not mention his love of nature. To him "nature was a revelation of God." He loved to "go forth under the open sky and list to nature's teaching." Wild flowers, trees, shrubs, and birds were his friends.

"To him who in the love of nature holds
Communion with her visible forms, she speaks
A various language; for his gayer hours
She has a voice of gladness, and a smile
And eloquence of beauty, and she glides
Into his darker musings with a mild
And healing sympathy, that steals away
Their sharpness, ere he is aware."

Was it not beautifully fitting that the long tedious days of his last illness were rewarded by several months of improved health? Much of this time he spent in very close communion

wth the visible forms of nature, and became acquainted with her various languages. But the dominant note must have been one of a deep abiding peace and healing sympathy that stole away the sharpness of his forced retirement and suffering. And "so nature dealt with him and by the hand led him to rest so gently that he went scarce knowing if he wished to go or stay."

Committee—Anderson County Medical Society.

This tribute was read at last regular meeting December 11, 1935.

PEE DEE MEDICAL ASSOCIATION

The following program was given at the 87th meeting of the Pee Dee Medical Association, held at Florence, S. C., Tuesday Evening, November 26, 1935:

1. Recent Advances in the Treatment of Acute Infectious Diseases in Children, Dr. Sam Ravenel, Greensboro, N. C.
2. Indications for Surgery in the Treatment of Thyroid Disease, Dr. Addison Brenizer, Charlotte, N. C.
3. Endocrine Therapy in Obstetrics and Gynecology, Dr. Oren Moore, Charlotte, N. C.
4. The Igorot and Modern Medicine, Dr. Hawkins K. Jenkins, Sagada, P. I.

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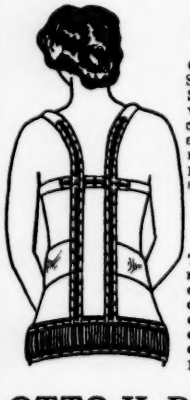

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Long Leg Brace	$20.00
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Shoulder Brace	2.50
Walking Caliper	17.50
Walking Iron	1.00
Knee Gage	20.00
French Truss	3.50
Hood Truss	4.00

Sacro Iliac Belt $3.00

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